

In the Claims:

Please amend the claims as follows:

1-10. (Cancelled)

11. (New) A population of human marrow stromal cells enriched for small and rapidly self-renewing stem (RS) cells, said population comprising about 95% RS cells, wherein said RS cells are about seven microns in diameter, comprise granular and agranular cells, and do not express STRO-1, PDGF-R, EGF-R, CD10 and CD147.

12. (New) The population of human marrow stromal cells of claim 11, wherein said population enriched for RS cells has an increased capacity for multilineage differentiation compared to a population of human marrow stromal cells not enriched for RS cells.

13. (New) The population of human marrow stromal cells of claim 11, wherein said RS cells have a high nucleus to cytoplasm ratio.

14. (New) The population of human marrow stromal cells of claim 11, further wherein said RS cells express at least one of the polypeptides selected from the group consisting of VEGF receptor-2 (FLK-1), TRK (an NGF receptor), transferrin receptor, annexin II (lipocortin 2) and CD49e (integrin alpha 5).

15. (New) The population of human marrow stromal cells of claim 11, further wherein cells within a first subtype of said RS cells are agranular and express VEGF receptor-2 (FLK-1), TRK (an NGF receptor), transferrin receptor, and annexin II.

16. (New) The population of human marrow stromal cells of claim 15, further wherein said cells within a first subtype express CD44 (Hyaluronic acid receptor), CD49e (integrin alpha 5) and CD59.

17. (New) The population of human marrow stromal cells of claim 11, further wherein cells within a second subtype of said RS cells are granular, express CD49e (integrin alpha 5) and do not express CD44 (Hyaluronic acid receptor) and CD59.

18. (New) The population of human marrow stromal cells of claim 17, further wherein said cells within a second subtype do not express CD81 and CD90.

19. (New) The population of human marrow stromal cells of claim 11, further wherein said RS cells express heat shock protein-27, tumor rejection antigen, glutathione-S transferase, peroxiredoxin 1, voltage-dependent-anion channel-2, protein kinase C substrate, phosphatase 2A inhibitor, esterase D, RNase A, initiation factor 5a, elongation factor 1-alpha, ribosomal protein S12, ribosomal protein large P1, ribosomal protein large P2, transcription factor BTF 3a, annexin I, destrin, myosin light chain, lactate dehydrogenase A, glycerolaldehyde-3-P dehydrogenase, citrate synthetase, transketolase, P-glycerolmutase, aldoketo reductase 7(A2), alpha-amylase inhibitor CM3, enoyl-CoA hydratase, and proteosome subunit alpha-4.